

## IPv6 over PPPoE on the WAN

This example shows how to configure your ATP/USG Flex's WAN interface as PPPoE with prefix delegation. Device PPPoE interface run as DHCP client to get prefix and DNS from ISP.

In this scenario:

PPPoE interface run as DHCP client to request prefix delegation and DNS server from ISP.



Note:

All network IP addresses and subnet masks are used as examples in this article. Please replace them with your actual network IP addresses and subnet masks. This example was tested using ATP/USG Flex (Firmware Version: 5.00)

## Setting Up the IPv6 Interfaces Wan

1. In the Configuration > Network > Interface > PPP Configuration section, double-click the PPP interface you want to modify.
2. Select account profile in ISP Setting.



**ISP Setting**

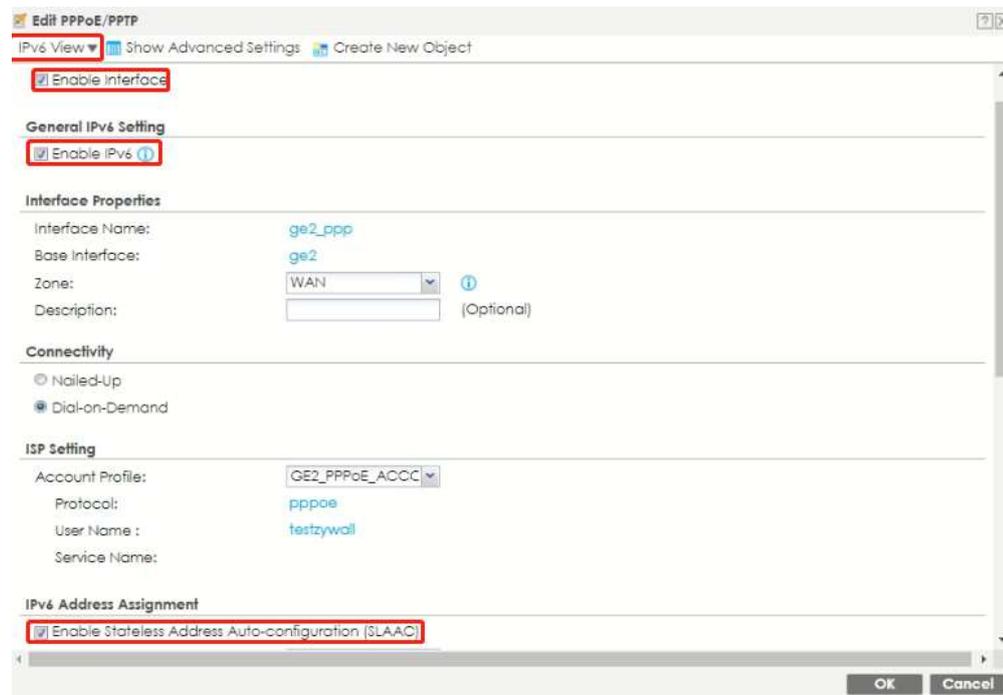
Account Profile: GE2\_PPPOE\_ACCC

Protocol: pppoe

User Name : testzywall

Service Name:

3. Choose IPv6 View, Enable Interface and Enable IPv6. In IPv6 Address Assignment text box, enable Stateless Address Auto-configuration (SLAAC)



**Edit PPPoE/PPTP**

IPv6 View | Show Advanced Settings | Create New Object

Enable Interface

**General IPv6 Setting**

Enable IPv6 ⓘ

**Interface Properties**

Interface Name: ge2\_ppp

Base Interface: ge2

Zone: WAN ⓘ

Description: (Optional)

**Connectivity**

Nailed-Up

Dial-on-Demand

**ISP Setting**

Account Profile: GE2\_PPPOE\_ACCC

Protocol: pppoe

User Name : testzywall

Service Name:

**IPv6 Address Assignment**

Enable Stateless Address Auto-configuration (SLAAC)

OK Cancel

4. Set up interface as V6 client.



**DHCPv6 Setting**

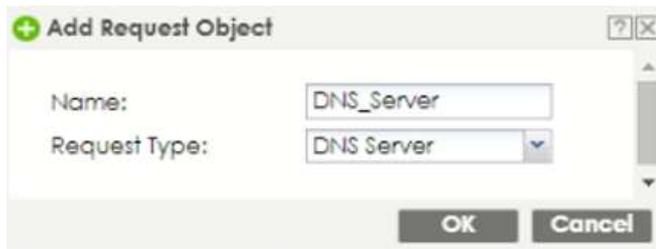
DHCPv6: Client

DUID: 00:03:00:01:20:20:06:01:10:2A

5. Create DHCPv6 Request object to get Prefix Delegation and DNS from ISP.



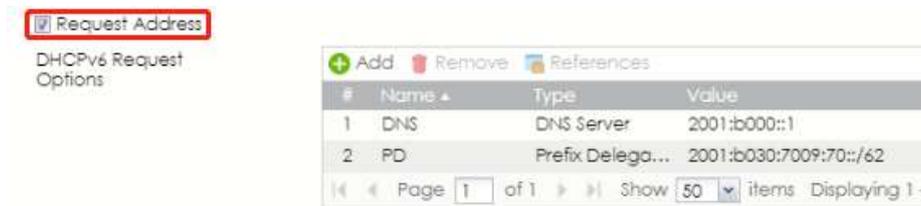
DNS object



Prefix delegation



6. Tick Request Address.



## Lan

1. In the Configuration > Network > Interface > Ethernet Configuration section, double-click the LAN interface you want to modify.
2. LAN interface IP assignment gets from Prefix Delegation and Suffix setting. In this case, we set suffix to ::1/64

**IPv6 Address Assignment**

Enable Stateless Address Auto-configuration (SLAAC)

Link-Local Address: fe80::221:9ff:fe01:1616/64

IPv6 Address/Prefix Length:  (Optional)

**Advance**

Gateway:  (Optional)

Metric:  (0-15)

Address from DHCPv6 Prefix Delegation

#	Delegated Prefix	Suffix Address	Address
1	PD	::1/64	2001:b030:7009:70::1/64

Page 1 of 1 | Show 50 items | Displaying 1 -

3. Tick "Enable Router Advertisement", "Advertised Hosts Get Network Configuration From DHCPv6", and "Advertised Hosts Get Other Configuration From DHCPv6".

**IPv6 Router Advertisement Setting**

Enable Router Advertisement

**Advance**

Advertised Hosts Get Network Configuration From DHCPv6

Advertised Hosts Get Other Configuration From DHCPv6

4. Set up Advertised Prefix from DHCPv6 Prefix Delegation.

**IPv6 Router Advertisement Setting**

Enable Router Advertisement

**Advance**

Advertised Hosts Get Network Configuration From DHCPv6

Advertised Hosts Get Other Configuration From DHCPv6

Router Preference: Medium

MTU: 1480 (1280-1500, 0 is disabled)

Hop Limit: 64 (0-255, 0 is disabled)

Advertised Prefix Table

#	IPv6 Address/Prefix Length
---	----------------------------

Page 0 of 0 | Show 50 items | No data to display

**Advance**

Advertised Prefix from DHCPv6 Prefix Delegation

#	Delegate...	Suffix Add...	Address
1	PD	::0:0:0/64	2001:b030:7009:70::/64

Page 1 of 1 | Show 50 items | Displaying 1 -

## Test Result

Client IPv6 address.

```
Connection-specific DNS Suffix . :  
Description . . . . . : Realtek PCIe GBE Family Controller  
Physical Address. . . . . : DC-4A-3E-3A-2C-30  
DHCP Enabled. . . . . : Yes  
Autoconfiguration Enabled . . . . : Yes  
IPv6 Address. . . . . : 2001:b030:7009:70:9108:4023:79e8:ee27(Preferred)  
Temporary IPv6 Address. . . . . : 2001:b030:7009:70:34e8:c9c6:d9c8:55bd(Preferred)  
Link-local IPv6 Address . . . . . : fe80::9108:4023:79e8:ee27%10(Preferred)  
IPv4 Address. . . . . : 192.168.1.33(Preferred)  
Subnet Mask . . . . . : 255.255.255.0  
Lease Obtained. . . . . : Tuesday, September 28, 2021 11:26:57 AM  
Lease Expires . . . . . : Thursday, September 30, 2021 3:32:12 PM  
Default Gateway . . . . . : fe80::2221:9ff:fe01:1616%10  
192.168.1.1  
DHCP Server . . . . . : 192.168.1.1  
DHCPv6 IAID . . . . . : 115100222  
DHCPv6 Client DUID. . . . . : 00-01-00-01-27-E1-FA-FB-DC-4A-3E-3A-2C-30  
DNS Servers . . . . . : 192.168.1.1  
NetBIOS over Tcpip. . . . . : Enabled
```

Ping to Google web site.

```
C:\Users\NT03186>ping www.google.com.tw  
  
Pinging www.google.com.tw [2404:6800:4012:3::2003] with 32 bytes of data:  
Reply from 2404:6800:4012:3::2003: time=6ms  
Reply from 2404:6800:4012:3::2003: time=6ms  
Reply from 2404:6800:4012:3::2003: time=6ms  
Reply from 2404:6800:4012:3::2003: time=6ms  
  
Ping statistics for 2404:6800:4012:3::2003:  
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),  
Approximate round trip times in milli-seconds:  
Minimum = 6ms, Maximum = 6ms, Average = 6ms
```

Test Your IPv6 connection.

The screenshot shows a web browser window with the URL `test-ipv6.com`. The page title is "Test your IPv6 connection." and it features several tabs: "Test IPv6", "common problem", "Mirror server", and "statistics". The main content area displays the following information:

- Your IPv4 address on the Internet is 118.163.48.108
- Your IPv6 address on the Internet 2001:b030:7009:70:34e8:c9c6:d9c8:55bd
- Your Internet Service Provider (ISP) is HINET Data Communication Business Group
- You have enabled IPv6. You can now view a tab to test the connection status of other IPv6 websites. [\(Detailed Information\)](#)
- The HTTPS support on this website is in **Beta**. [\(Detailed Information\)](#)
- Your DNS server (which may be maintained by your ISP) seems to support the IPv6 Internet protocol.

At the bottom, a progress bar shows "Your score for IPv6 preparation" as **10/10**. Below the bar, it says: "When the website only uses IPv6 one after another, please prepare and set up your IPv6 in advance".